

Health Indicators for Community Health Assessment



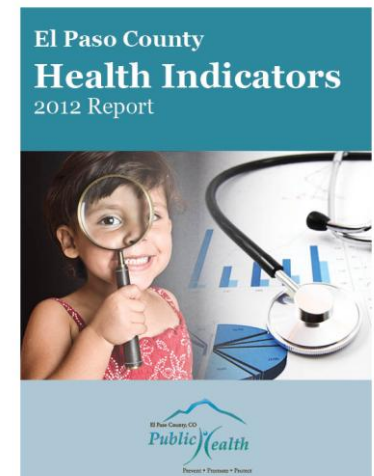
BERNADETTE ALBANESE, MD, MPH

**COMMUNITY HEALTH ASSESSMENT WEBINAR
JUNE 13, 2012**

Topics



- Background of Community Health Assessment in El Paso County
- Brief review of epidemiologic techniques for data analysis
- Sources of data for population health indicators
- Displaying population health data



Medical Model of “Diagnostic” Healthcare

Healthcare provider



Patient



Symptoms



Illness Evaluation



Treatment/Intervention



Improved Health

Public Health Model of Population Health

Public Health Evaluator



Population



Descriptive/Analytic Epidemiology



Health Indicators/Comparisons



Identify health issues/
Partnerships for interventions



Improved Health

What is a Community Health Assessment?



- An analytic process intended to describe the health of the community and identify issues that cause
 - Illness, or lack of wellness
 - Hospitalizations
 - Injury
 - Loss of quality of life
 - Death
 - Health inequities

Outcomes of CHA



- What does CHA do?
 - Provides objective measures of health behaviors, health outcomes, illness, and death
 - “Tells it like it is”
 - Find emerging issues, trends
 - Goes beyond just access to health care
- What doesn't CHA do?
 - Make judgments
 - Define capacity to change health
 - Prioritize resources

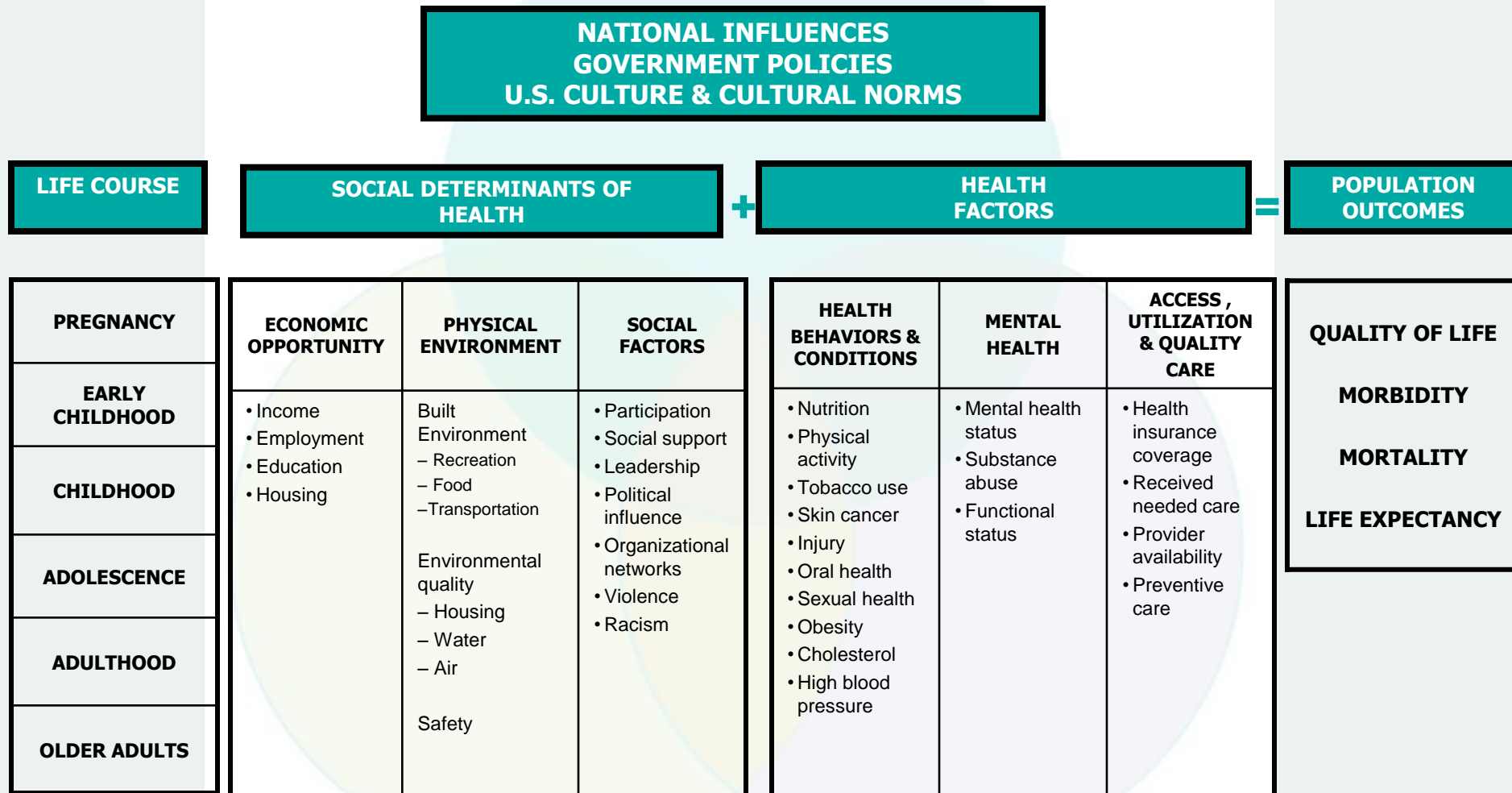
Identifying Health Indicator Set



- El Paso County Public Health participated on CDPHE Health Indicators Taskforce in 2010
- Crosswalk between sample indicator set and
 - CDPHE MCH priorities
 - CO Health Foundation
 - RWJF County Rankings
 - CDC Winnable Battles
 - IOM Leading Health Indicators
- Still needed organizational framework to communicate data:
 - Used CO Winnable Battles as platform for organizing content into “health areas”
 - Used CDPHE Health Equity Model

Health Equity

An Explanatory Model for Conceptualizing the Social Determinants of Health



El Paso County Health Indicators



- Socioeconomic description of El Paso County
- Morbidity and mortality
- Access to care
- Environmental health
- Food safety
- Healthy eating and active living
- Motor vehicle injury
- Oral health
- Tobacco use
- Unsafe sexual practices and teen pregnancy
- Vaccine-preventable infectious diseases

Collecting Qualitative Data



- Conducted key informant interviews to identify perceived health issues in El Paso County
 - 28 external interviews with key community leaders
 - 6 internal interviews with EPCPH program managers
- Used a standardized questionnaire (45 minutes)
 - Participants were asked to identify important health issues in EPC as well as the population and economic burden of these issues
 - Also asked to identify “priority” health issues to be addressed over the next 5 years
- Obesity chosen as a top priority, as well as mental health and access to care

Quick Epi Review on Rates



Review of Rates



- Incidence rate - new cases of a specific disease occurring during a specified time
- Prevalence rate - existing (old or new) cases of a specific disease
 - Often presented as a proportion (e.g., percent of a population with a particular condition)

Rates vs Proportions



- Rates provide frequency of events adjusted for size of populations
 - Tells you how fast the disease is occurring; quantifies risk
 - E.g., Rate of prostate cancer is 400 per 100,000 men per year
- Proportions describe the distribution of disease within a population, based on certain characteristics
 - Tells you what fraction of a population is affected; how the burden of disease is distributed
 - E.g., 75% of prostate cancer cases occur in men aged 60 years and older

Comparing Rates Across Populations



- Stratification – the process of separating data into subgroups according to specific criteria
 - Descriptive epidemiologic analysis often uses stratification to identify differences in risk or outcomes based in certain demographic characteristics that are relevant to the disease or other condition
 - ✦ Sometimes referred to as a “cross-tab”
 - ✦ Commonly used strata – age, sex, race/ethnicity
- Adjusted rates
 - ✦ For mortality, age-adjustment commonly used
 - ✦ Can do same calculation for other demographic characteristics

Rates – Different Approaches



Crude Mortality Rate $\frac{\text{\# total deaths from all causes in 1yr}}{\text{Midyear population estimate}}$

Disease Specific Mortality Rate* $\frac{\text{\# total deaths from specific causes in 1yr}}{\text{Midyear population estimate}}$

Age Specific Mortality Rate* $\frac{\text{\# total deaths in a specific age group in 1yr}}{\text{Midyear population estimate of age group}}$

*Same approach can be used for incidence or prevalence

Finding Population Health Data



Collecting Quantitative Data



- For EPCPH, majority of data was collected from standardized, pre-existing sources
 - Health survey data
 - Disease and injury surveillance data
 - Socioeconomic data
 - Vital statistics data
 - Population data
- Other data was acquired through special data requests to various programs at CDPHE (primarily Health Statistics)

Quantitative Data Sources



Population counts and other administrative data	<ul style="list-style-type: none">• Colorado State Demography Office• Colorado Department of Labor and Employment• Colorado Department of Education
Birth and death data	<ul style="list-style-type: none">• Colorado Department of Public Health and Environment
Socioeconomic data	<ul style="list-style-type: none">• U.S. Census Bureau• American Community Survey (ACS)• Colorado Department of Labor and Employment
Disease or injury surveillance data	<ul style="list-style-type: none">• Colorado Department of Public Health and Environment• National Highway Traffic Safety Administration• Colorado Hospital Association
Health survey data	<ul style="list-style-type: none">• Behavioral Risk Factor Surveillance System (BRFSS)• Colorado Child Health Survey• Colorado Health Access Survey (formerly, Colorado Household Survey)• National Immunization Survey (NIS)• National Survey on Drug Use and Health• Pregnancy Risk Factor Monitoring System (PRAMS)• Youth Risk Behavior Surveillance System (YRBS)



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Demographic Profiles

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US Census Data &
Information

CEDIS

Community Development
Office (CDO)

Geographic Information
Systems (GIS)

DLG Electronic Filing Portal

Population Data

Population totals are available for the following geographies:

- United States & States
- State and Sub-State Regions
- Counties
- Municipalities

Note: The State Demography Office has produced an update to its population estimates and forecasts to incorporate the recently released 2010 Census count population totals. The files are available with the 2010 Census data [here](#).

Also Available

- Estimates Methodology
- Forecasts Methodology
- Definitions of Sub-State Regions
- Planning Management Region Map
- Statistical Regions Map
- Thematic Maps
- Land Density

Additional Population data:

- Age and Gender
- Components of Change
- Race and Hispanic Origin
- US Census Bureau

Comments or questions?

Your Selections

"Your Selections" is empty

Search using the options below:

Topics

(age, income, year, dataset, ...)

Geographies

(states, counties, places, ...)

Race and Ethnic Groups

(race, ancestry, tribe)

Industry Codes

(NAICS industry, ...)

Getting Detailed Data

The following data are available on American FactFinder:

- **Decennial Census**
Taken every 10 years to collect information about the people and housing of the United States
- **American Community Survey**
An ongoing survey that provides data about your community every year
- **Puerto Rico Community Survey**
The equivalent of the American Community Survey for Puerto Rico
- **Economic Census**
Profiles the U.S. economy every 5 years
- **Population Estimates Program**
Population numbers between censuses
- **Annual Economic Surveys**
Data from the Annual Survey of Manufactures, County Business Patterns, Nonemployer Statistics and more

[more >](#)

Your source for population, housing, economic, and geographic information

Quick Start

Enter search term(s) and click 'GO' ?

topic or table name state, county or place (optional)

for

GO

☒ topics ☐ race/ancestry ☐ industries

Or use the options on the left to begin your search

News and Notes

[GET EMAIL UPDATES](#)

Mar 29, 2012

The Census Bureau is releasing Summary File 2 data on a state-by-state flow basis from December 2011 through April 2012. Data has been released for: NV, NM, CT, DC, OK, OR, FL, MA, MS, WA, ND, RI, TN, TX, AR, HI, IA, MD, AK, LA, MI, NJ, IL, IN, SC, SD, ID, UT, WV, VA, GA, ME, MO, and VA. SF 2 provides detailed data on age, sex, households, families, the group quarters population, and occupied housing units for up to 331 race, Hispanic or Latino origin, and tribal population groups. Presentation of SF 2 tables for a population group is subject to a threshold of 100 or more people of a particular group in a particular geographic area. [more >](#)

Mar 22, 2012

The Census Bureau is releasing Summary File 2 data on a state-by-state flow basis from December 2011 through April 2012. Data has been released for: NV, NM, CT, DC, OK, OR, FL, MA, MS, WA, ND, RI, TN, TX, AR, HI, IA, MD, AK, LA, MI, NJ, IL, IN, SC, SD, ID, UT, WV, and VA. SF 2 provides detailed data on age, sex, households, families, the group quarters population, and occupied housing units for up to 331 race, Hispanic or Latino origin, and tribal population groups. Presentation of SF 2 tables for a population group is subject to a threshold of 100 or more people of a particular group in a particular geographic area. [more >](#)

Mar 15, 2012

The Census Bureau is releasing Summary File 2 data on a state-by-state flow basis from December 2011 through April 2012. Data has been released for: NV, NM, CT, DC, OK, OR, FL, MA, MS, WA, ND, RI, TN, TX, AR, HI, IA, MD, AK, LA, MI, NJ, IL, IN, SC, and SD. SF 2 provides detailed data on age, sex, households, families, the group quarters population, and

[Census Newsroom >](#)

AFF & ACS are used to describe how people live (not how many people there are)

U.S. Population Clock

16:32 UTC (EST+5) Apr 03, 2012

313,296,565

[more population clocks >](#)

Reference Maps

Reference Maps show selected geographic boundaries for an area along with orienting features, such as roads.

United States

GO

Address Search



Find Census data by entering a street address.

Load Query

Use Load Query to restore a previously saved query

LOAD QUERY



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US Census Data & Information

CEDIS

Community Development

Training

The State Demography Office periodically offers training sessions on a variety of data subjects and tools, including Census data. If you're interested in training on a specific topic not listed below, please send us an email.

Upcoming Trainings

- American FactFinder 2 for Advanced Users Coming Soon. Sign up for our listserv to receive notification.

Recorded Trainings

The following webinar-based trainings are available for view with commentary. When applicable, copies of the slides are also available in pdf format.

- Overview of State Demography Office Websites (Length: 21 minutes) **NEW!**
- Introduction to American FactFinder2 (Length: 36 minutes) **NEW!**
- Introduction to the American Community Survey (Length: 25 minutes) Slides (pdf)

Printable Guides

- Guide to Block and Tract Reference Maps **NEW!**
- American FactFinder2 Deep Linking Guide

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Query Data (CoHID)



Colorado Health and Environmental Data

Search Site

FIND

You can access data from many programs within the State Health Department through this page. If you have questions about this site, please contact the Health Statistics Section: health.statistics@state.co.us or (303) 692-2160.



Colorado Health Indicators

View the current status of health, health care and health coverage in Colorado using data provided by the Centers for Disease Control and Prevention and the Colorado Department of Public Health and Environment.

VISIT SITE



Colorado's Winnable Battles Data

CDPHE's Winnable Battles are public health priorities with large-scale impact on health and with known, effective strategies to address them.

VISIT SITE



Colorado Environmental Public Health Tracking

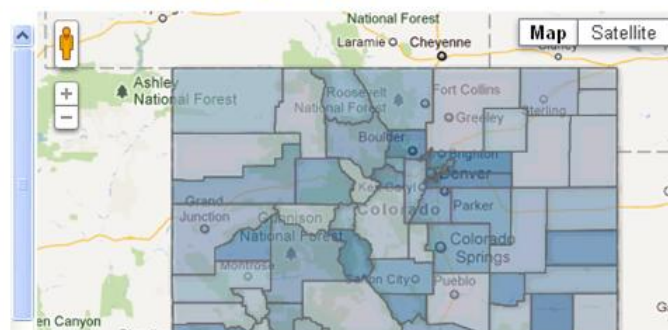
Colorado is part of the National Tracking Network, created in partnership with the Centers for Disease Control and Prevention (CDC) to make data on environmental hazards, exposures and health effects easier to find and use.

VISIT SITE

DATA BY TOPIC ▼

- Adolescent Health
- Adult Health
- Cancer Incidence Data
- Colorado Health Access Survey
- Communicable Disease
- Environmental Health Data
- Health Disparities
- Health Facility Acquired Infections
- Health Indicators
- Health Statistics Section Publications

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Query Data (CoHID)



Colorado Health Information Dataset (CoHID)

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Query Datasets ▼

All Datasets: Birth Data

GO



Birth Data

Since 1990 by county,
zipcode and census tract



Death Data

Since 1990 by county
and zipcode



Population
Estimates

Since 1990 by county



Behavioral Risk
Factors

Colo Adults 18 yrs/older



Birth Defect
Data

Data from last 5 years



Cancer
Incidence Data

From Central Cancer Registry



Pregnancy Risk
Assessment

CO Residents '97 to present



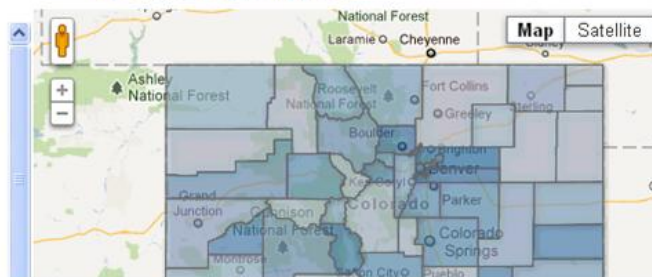
Injury
Hospitalizations

CO Residents '95 to present

COLORADO'S 10 WINNABLE BATTLES

Adolescent Health
Adult Health
Cancer Incidence Data
Colorado Health Access Survey
Communicable Disease
Environmental Health Data
Health Disparities
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Office of Surveillance, Epidemiology, and Laboratory Services

Behavioral Risk Factor Surveillance System

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SMART: BRFSS City and County Data

Selected Metropolitan/Micropolitan Area Risk Trends

The Selected Metropolitan/Micropolitan Area Risk Trends (SMART) project uses the Behavioral Risk Factor Surveillance System (BRFSS) to analyze the data of selected metropolitan and micropolitan statistical areas (MMSAs) with 500 or more respondents. BRFSS data can be used to identify emerging health problems, establish and track health objectives, and develop and evaluate public health policies and programs.

[Access Local Area Health Risk Data](#)

Find information on all health risk data for an MMSA by year and category. Generate reports that compare statistics to a different MMSA.

[View Local Area Quick-View Charts](#)

These quick-view charts show state, MMSA, and county data for a limited set of health risk factors, including smoking, obesity, and diabetes.

Which areas were included in this project?

View a listing of the MMSAs and the counties included in this project.

Select State:

For downloadable SMART data and documentation, including more information on risk factors and calculated variables, see the [Technical Documents and Survey Data](#) for a specific year.

[What is a Metropolitan/Micropolitan Statistical Area \(MMSA\)?](#)

[Why isn't my City/County represented on SMART BRFSS?](#)

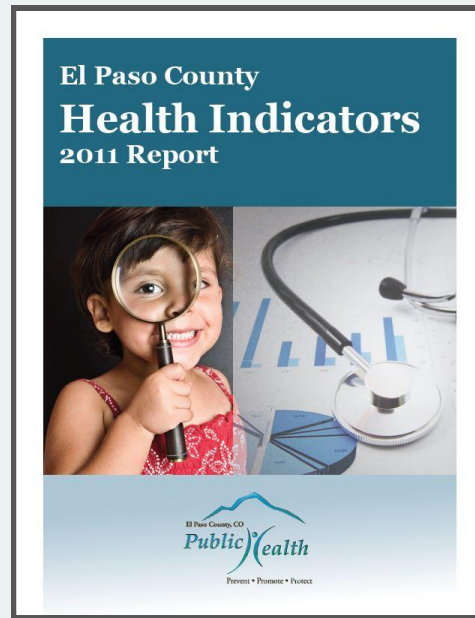
See Also...

- [State Coordinators](#)

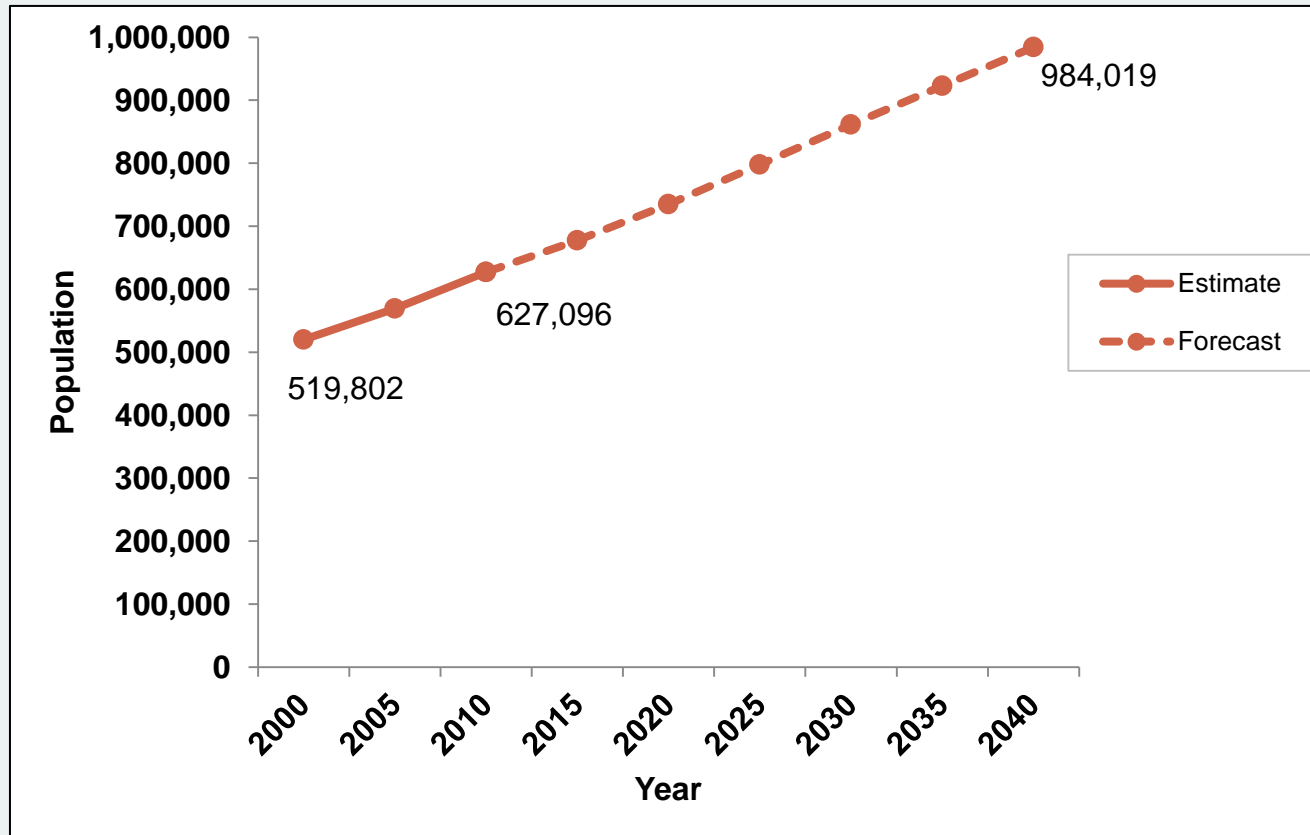
Displaying Population Health Data



DATA FROM EL PASO COUNTY 2012 HEALTH INDICATORS REPORT

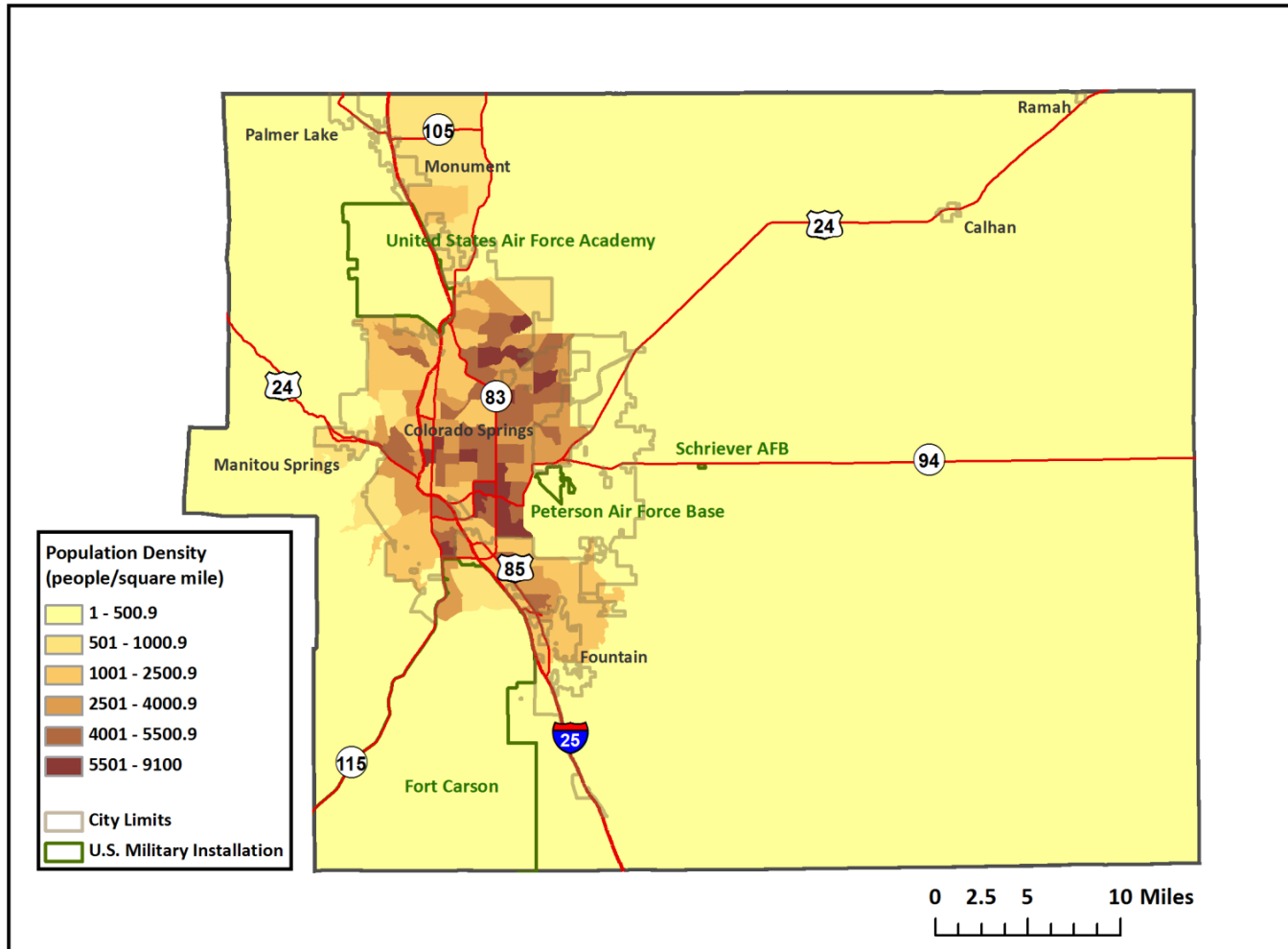


Population estimates and projected forecast, El Paso County 2000 to 2040



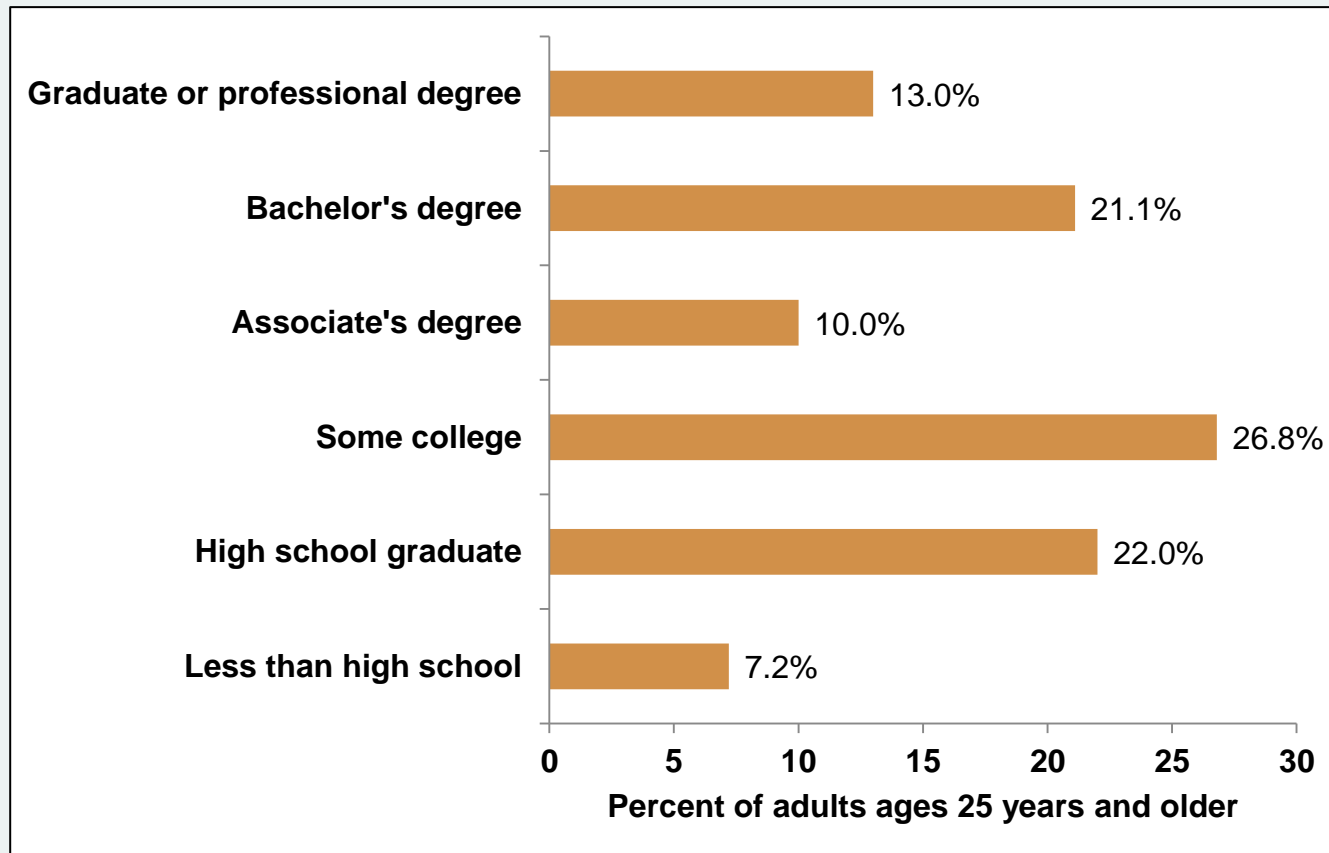
Source: Colorado Department of Local Affairs, State Demography Office. Population Totals for Colorado Counties.

Population density (people/square mile), by census tract, El Paso County 2010



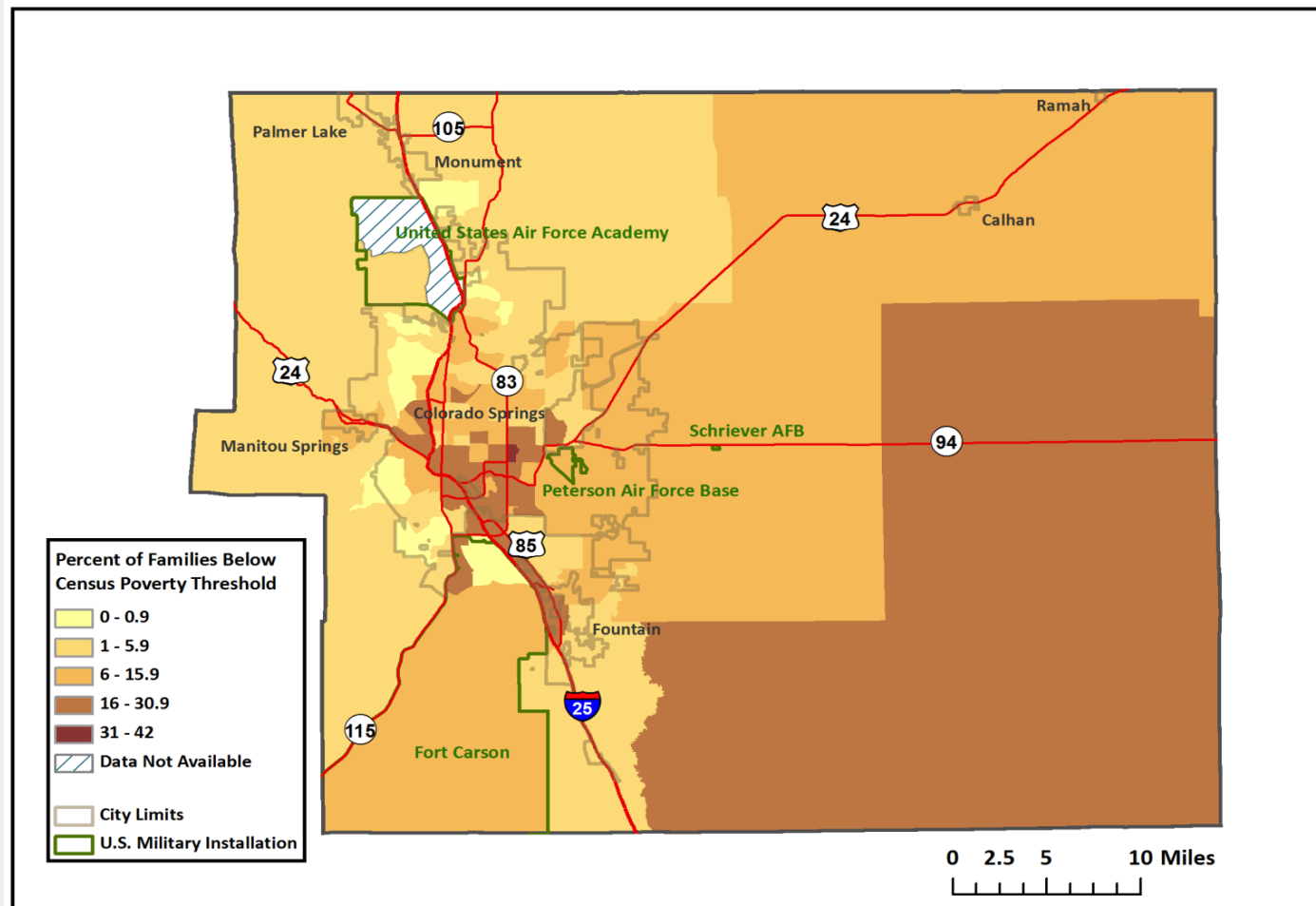
Source: U.S. Census Bureau. 2010 Census: Table GCT-PH1.

Educational attainment among adults ages 25 years and older, El Paso County 2010

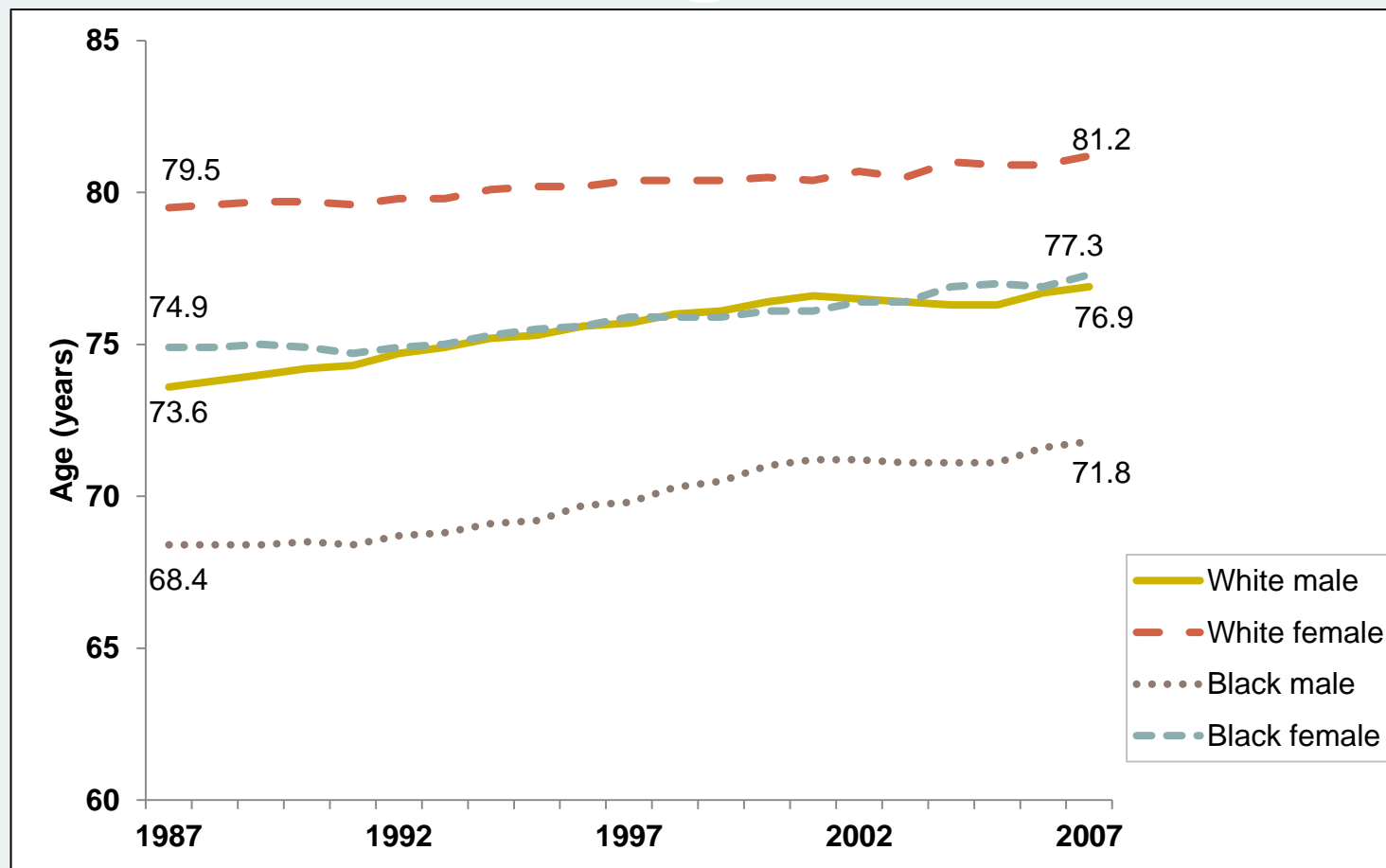


Source: U.S. Census Bureau. 2010 American Community Survey: Table DP02.

Percent of families below poverty threshold, by census tract, El Paso County 2006 to 2010



Life expectancy, by sex and race, El Paso County 1987 to 2007



Source: Kulkarni S, Levin-Rector A, Ezzati M, and Murray C. Falling behind: life expectancy in US counties from 2000-2007 in an international context. Population Health Metrics 2011; 9:16.

Top 10 causes of death, El Paso County 2007 to 2009



Rank	Cause of death	Crude # Deaths per 100,000 population per year
1	Cancer	128.5
2	Heart disease	113.6
3	Unintentional injuries	38.7
4	Chronic lower respiratory diseases	38.0
5	Cerebrovascular diseases	33.1
6	Suicide	18.6
7	Alzheimer's disease	15.6
8	Diabetes mellitus	12.8
9	Chronic liver disease and cirrhosis	9.7
10	Influenza and pneumonia	9.4

Source: Colorado Department of Health and Environment. Colorado Health Information Dataset: Death Data.



Age-specific leading causes of death, El Paso County 2007-2009



Ages <1

1. Congenital Malformations & Chromosomal Abnormalities
2. Length of Gestation & Fetal Malnutrition
3. SIDS
4. Complications of Pregnancy, Labor, & Delivery
5. Blood-related Disorders

Ages 1-14

1. Unintentional Injuries
2. Homicide/Legal Intervention
3. Malignant Neoplasms
4. Heart Disease
5. Congenital Malformations & Chromosomal Abnormalities

Ages 15-24

1. Unintentional Injuries
2. Suicide
3. Homicide/Legal Intervention
4. Malignant Neoplasms
5. Heart Disease

Ages 25-44

1. Unintentional Injuries
2. Suicide
3. Malignant Neoplasms
4. Heart Disease
5. Homicide/Legal Intervention

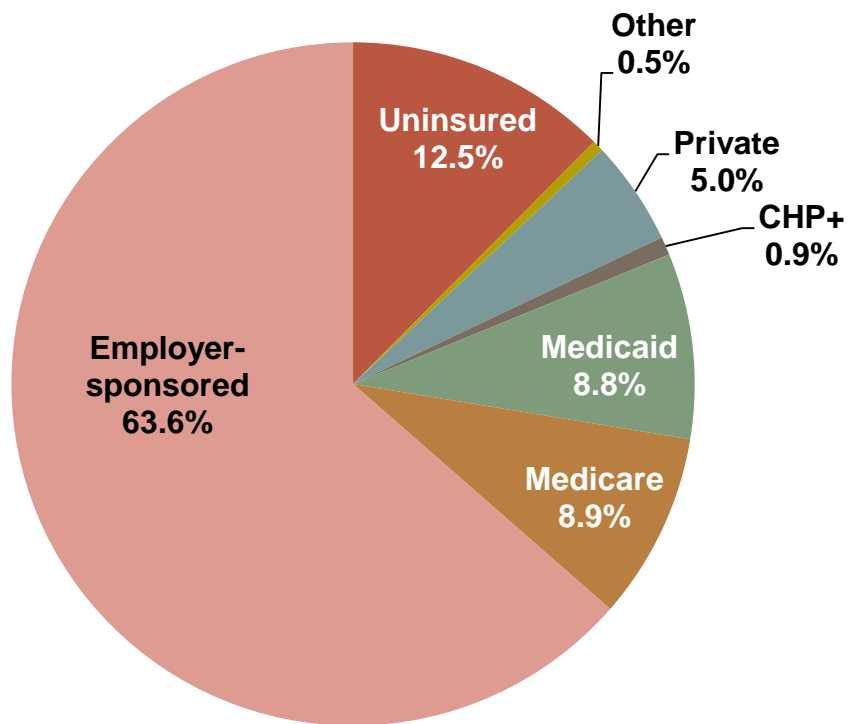
Ages 45-64

1. Malignant Neoplasms
2. Heart Disease
3. Unintentional Injuries
4. Suicide
5. Chronic Liver Disease & Cirrhosis

Ages 65+

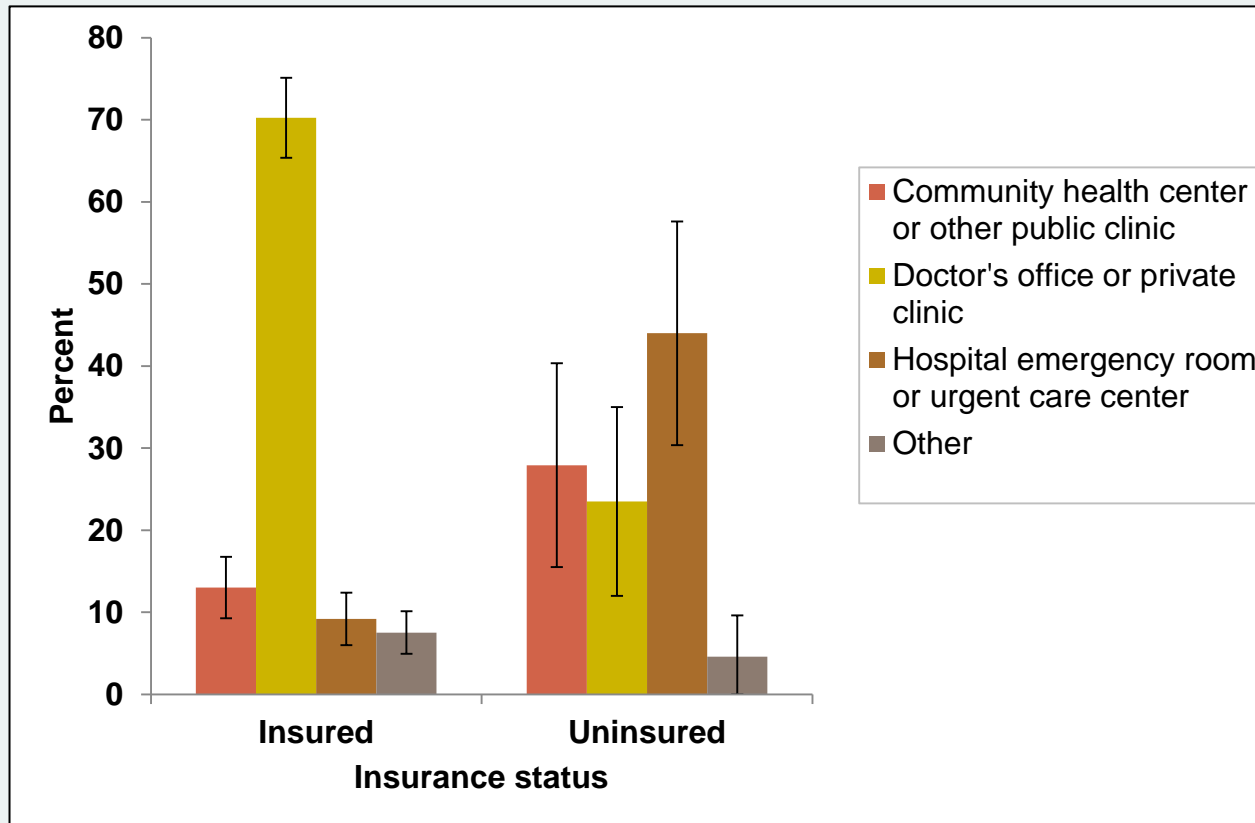
1. Malignant Neoplasms
2. Heart Disease
3. Chronic Lower Respiratory Diseases
4. Cerebrovascular Diseases
5. Alzheimer's Disease

Health insurance coverage, by type, El Paso County 2011



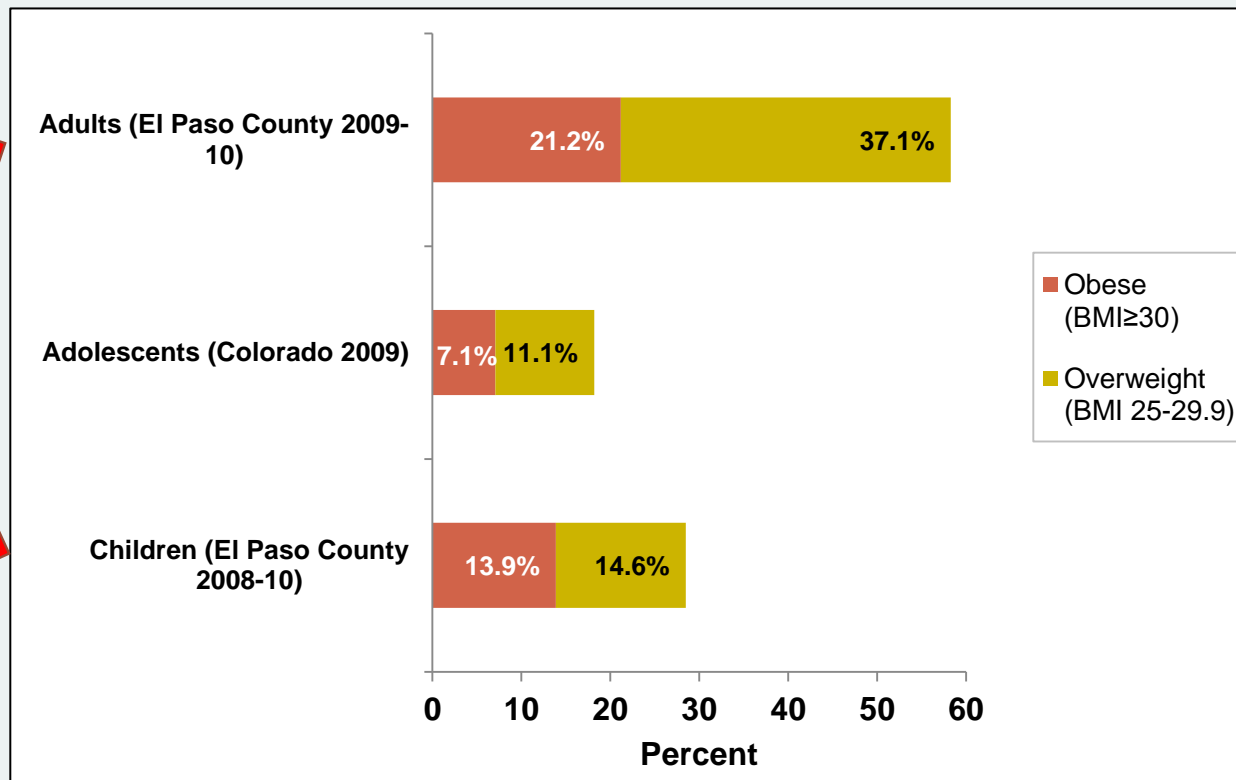
Source: Colorado Health Access Survey. 2011. Denver, CO: The Colorado Trust. (Special data request)

Usual source of health care, by insurance status, El Paso County 2011



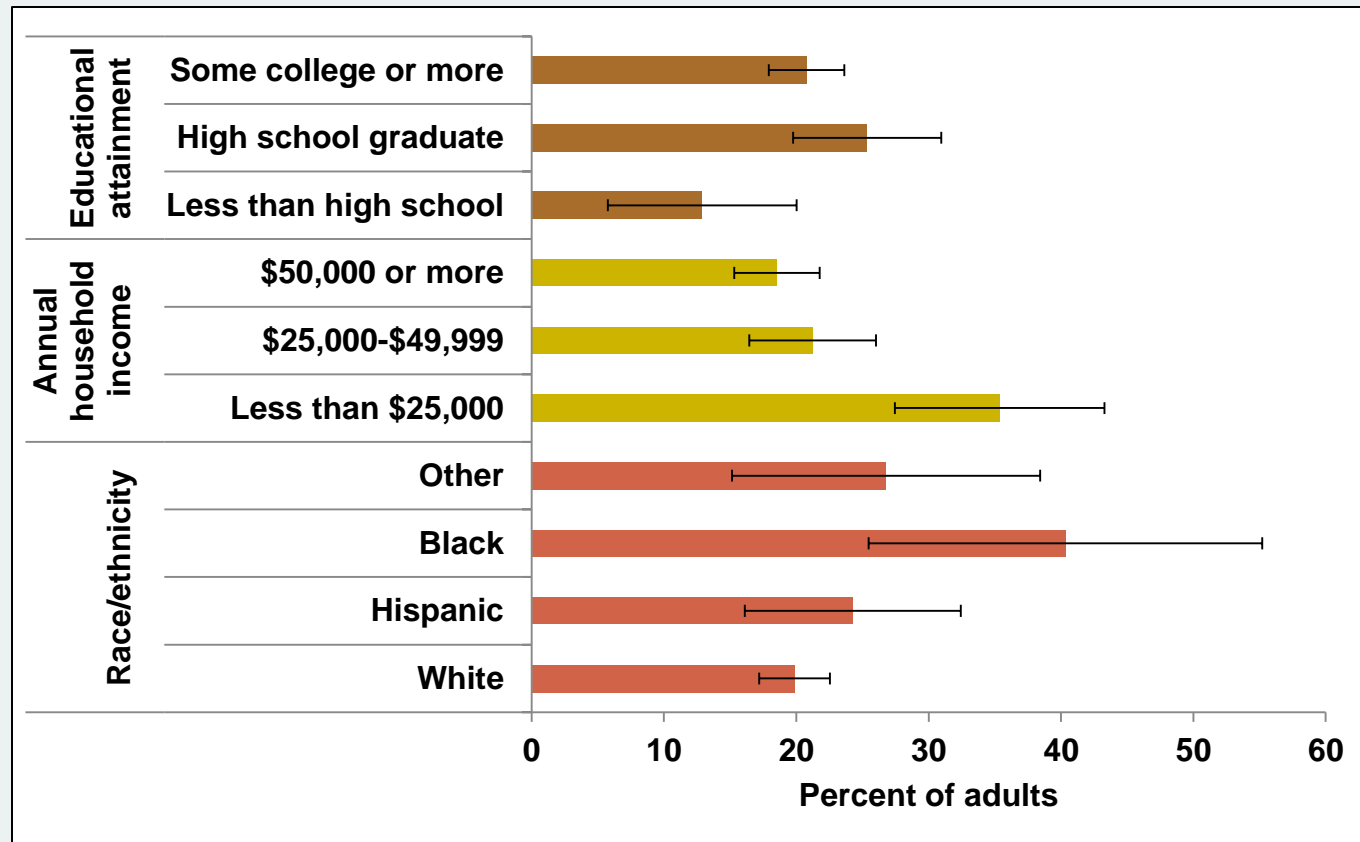
Note: Error bars represent the 95% margin of error for each value.

Percent of population with unhealthy weight, El Paso County and Colorado 2008 to 2010



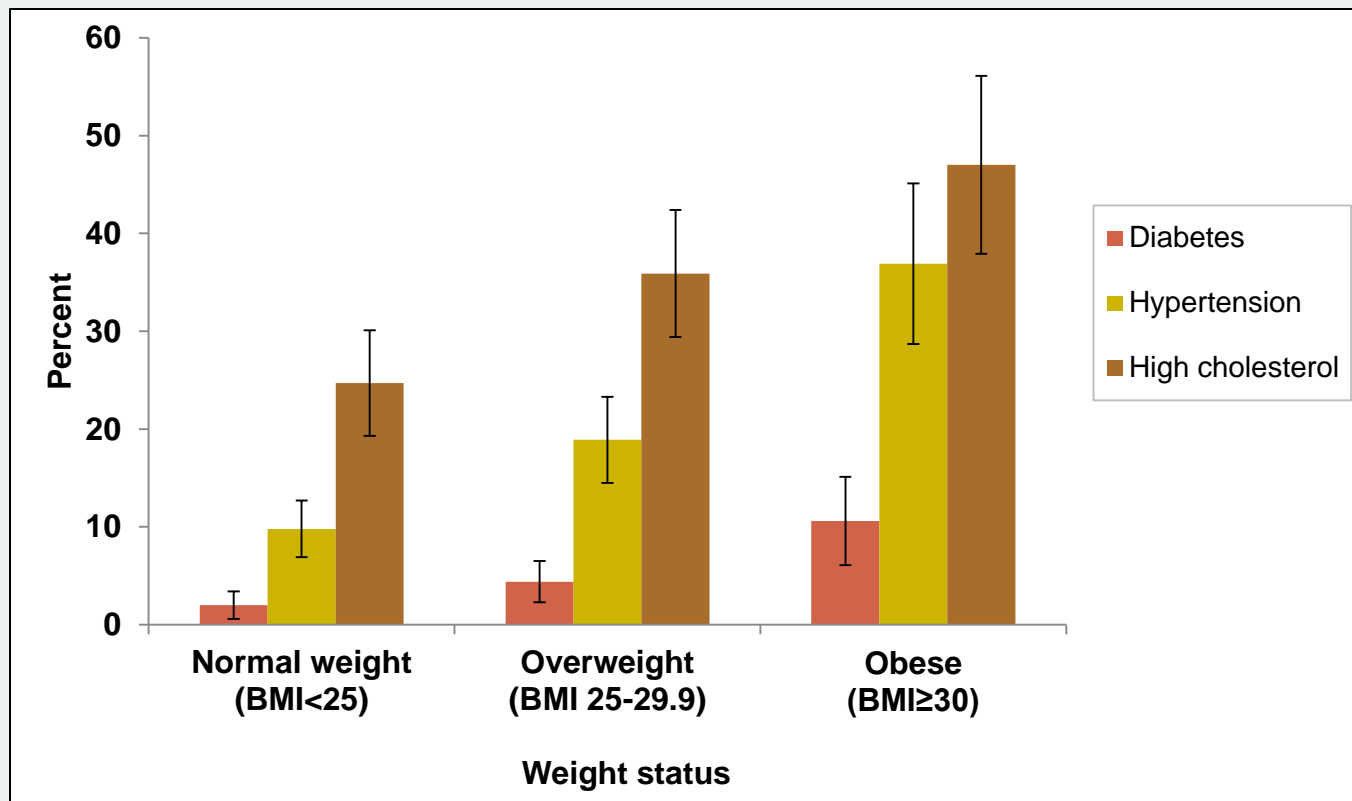
Sources: Colorado Department of Public Health and Environment. Colorado Child Health Survey; YRBS; and BRFSS data.

Percent of adults 18 years and older who are obese (BMI ≥ 30), by selected characteristics, El Paso County 2009 to 2010



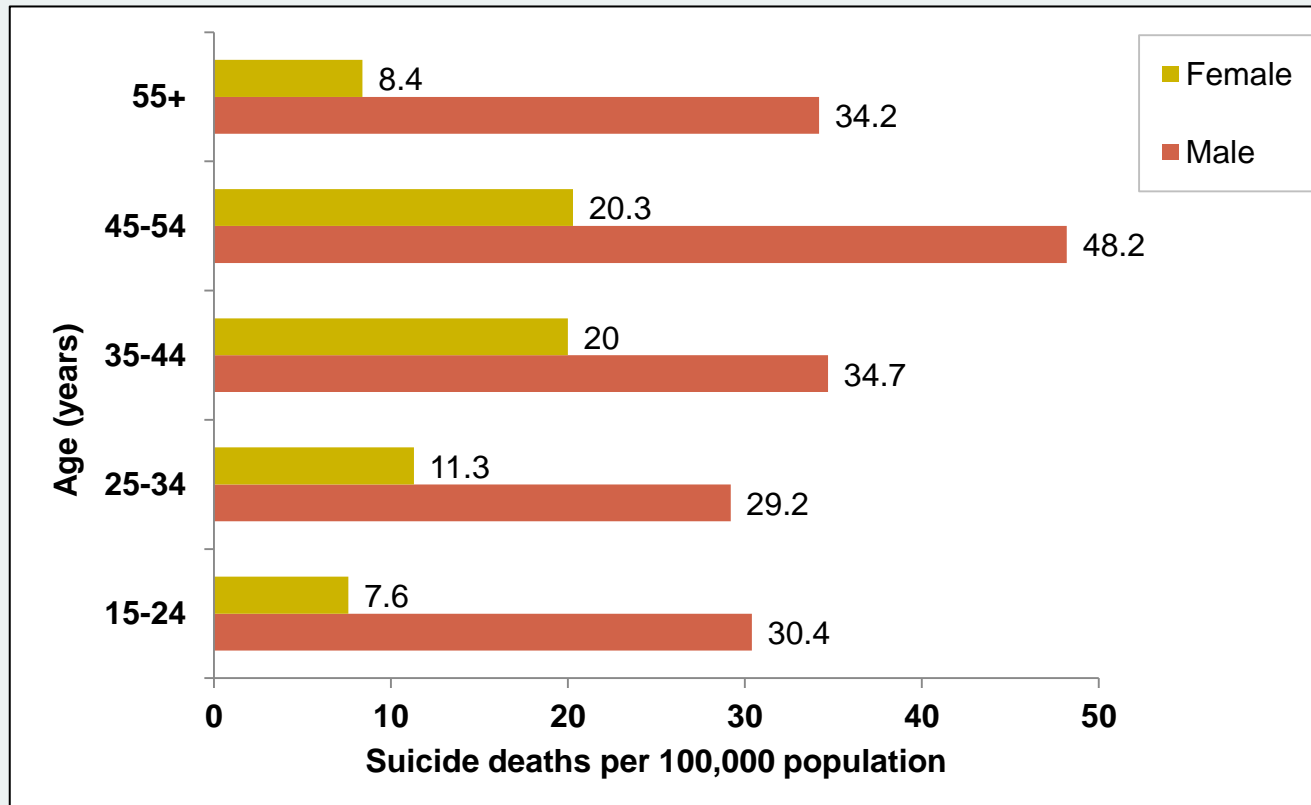
Note: Error bars represent the 95% margin of error for each value.

Percent of adults 18 years and older with co-existing conditions based on weight status, El Paso County 2009



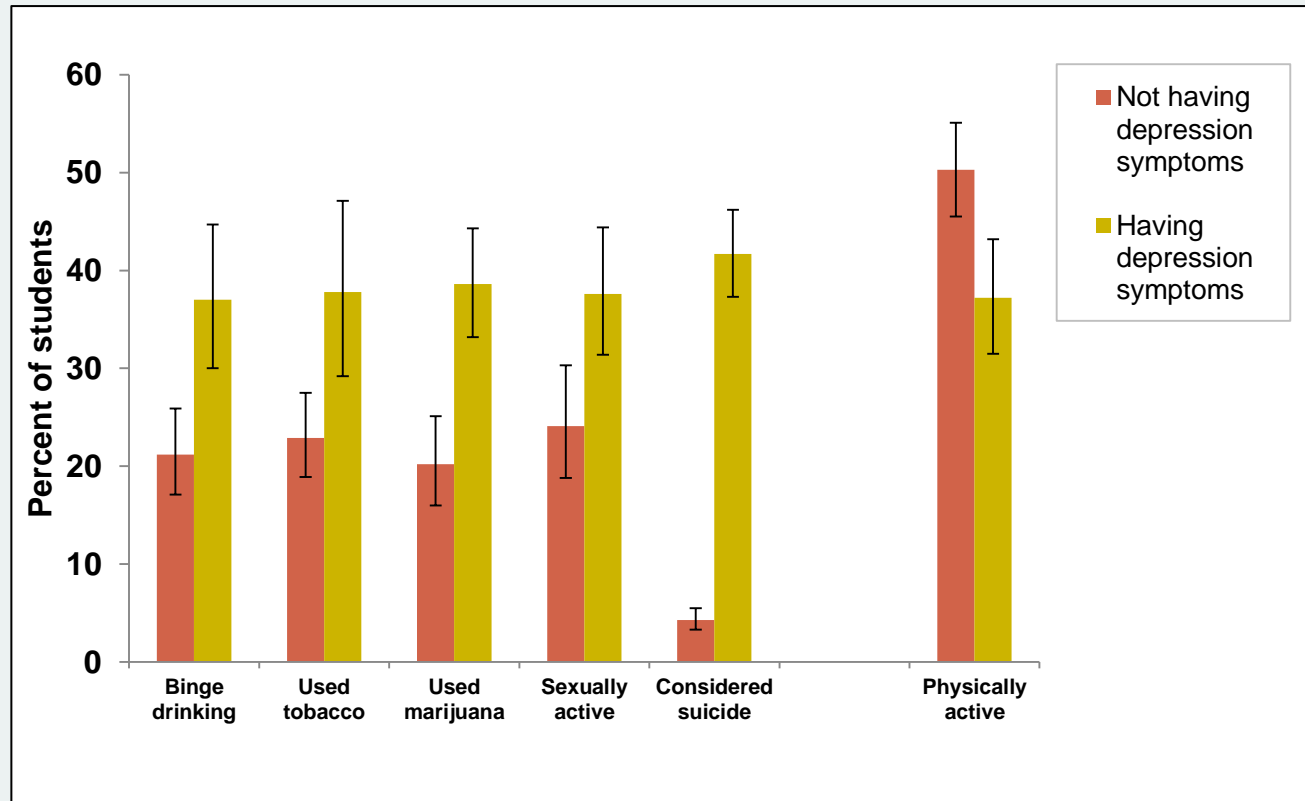
Note: Error bars represent the 95% margin of error for each value.

Suicide death rate, by age and sex, El Paso County 2008 to 2010



Source: Colorado Department of Health and Environment. Colorado Health Information Dataset: Death Data.

Correlation between symptoms of depression and other behaviors among Colorado students in ninth through twelfth grades, 2009



Note: Error bars represent the 95% margin of error for each value.

Characteristics of motor vehicle traffic fatalities in El Paso County, 2010

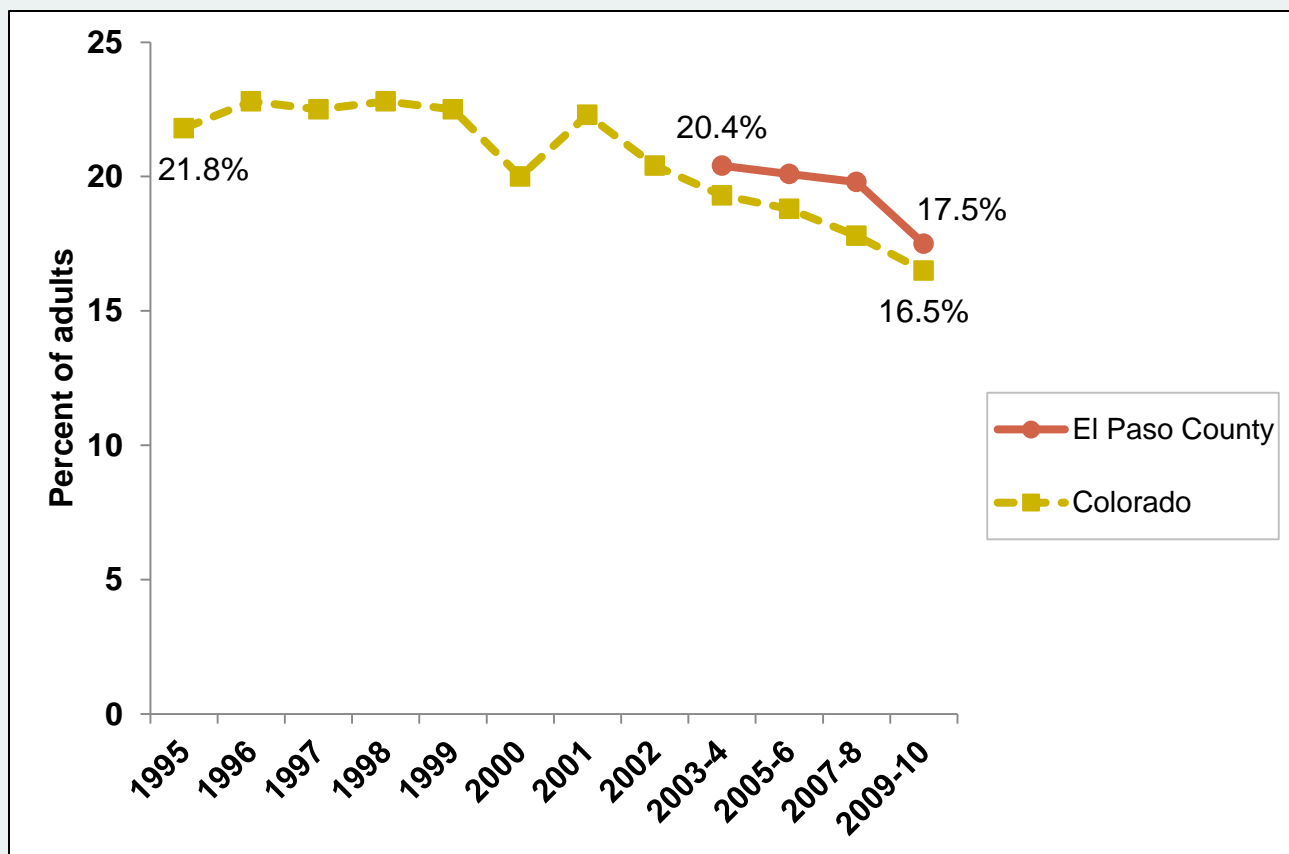


Vehicle and driver-related factors	Percent of total fatalities
Occupant in a passenger vehicle (all seat positions)	73.1%
Unrestrained driver or passenger	46.7% of passenger vehicle occupant fatalities
Motorcycle	19.5%
Driver or rider not wearing helmet	75.0% of motorcycle fatalities
Alcohol-impaired driver (BAC = 0.08+)	39.0%
Speeding-related crash	43.9%
Teen fatalities (ages 15-19)	12.2%



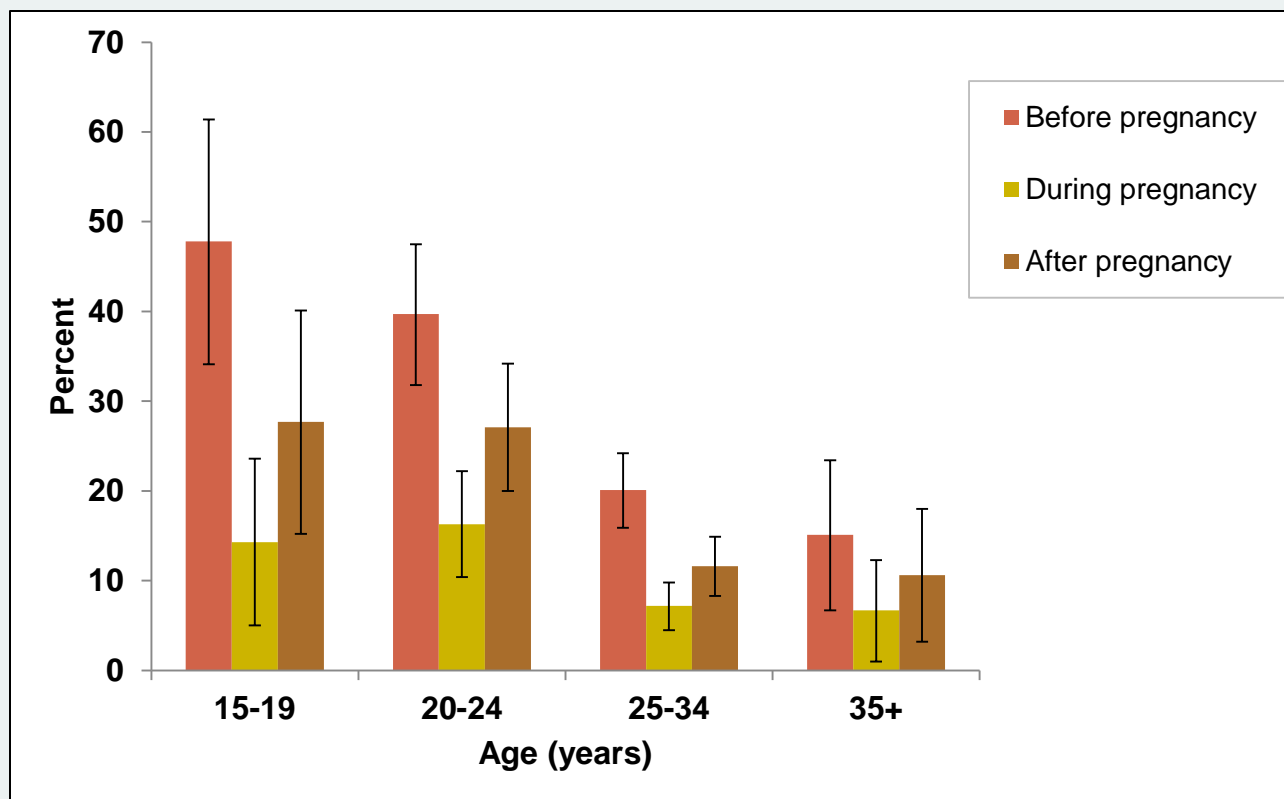
Source: U.S. Department of Transportation, National Highway Traffic Safety Administration. Fatality Analysis Reporting System Encyclopedia.

Percent of adults 18 years and older who report being a current cigarette smoker, 1995 to 2010



Source: Colorado Department of Public Health and Environment. Colorado Health Information Dataset: BRFSS Data.

Percent of new mothers who smoked before, during, or after pregnancy, by age, El Paso County 2008 to 2010



Note: Error bars represent the 95% margin of error for each value.

Data Considerations



- **What story do you want to tell about the data?**
- What are relevant comparison groups?
- Are their health disparities to describe?
- Use stratification to demonstrate differences in risk or outcomes.
- Combine years of data to increase survey sample size (if combining will not greatly impact interpretation).
- Combine years of data to stabilize estimates (if combining will not greatly impact interpretation).
- Go to original data sources when possible.
- **Ask a lot of questions of your data!**

